

### **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings of claims in the Application.

1. (Currently Amended): A dental prosthesis comprising a replication of at least one surface feature of at least one tooth having at least one portion formed of a bulk-solidifying amorphous alloy that is free from  $\text{Ni}$ , or Al ~~and Be~~, said bulk-solidifying amorphous alloy having an elastic strain limit of about 1.2% or more, a high hardness value of at least about 4 GPa, a glass transition temperature lower than 400°C, and a coefficient of thermal expansion of about  $10^{-5}$  (m/m °C) or less.

2. (Previously Presented): The dental prosthesis as described in claim 1, wherein the bulk-solidifying amorphous alloy is described by the following molecular formula:  $[\text{Zr}]_a(\text{Cu}, \text{Fe})_b(\text{B})_c$ , where "a" is in the range of from about 30 to 75, "b" is in the range of from about 5 to 60, and "c" is in the range of from about 0 to 50 in atomic percentages.

3. (Canceled).

4. (Previously Presented): A dental prosthesis as described in claim 1, wherein the bulk-solidifying amorphous alloy has an elastic strain limit of about 1.8% or more.

5. (Original): The dental prosthesis as described in claim 1, wherein the bulk-solidifying amorphous alloy has a high fracture toughness of at least about 10 ksi√in.

6. – 7. (Canceled).

8. (Original): The dental prosthesis as described in claim 1, wherein the bulk-solidifying amorphous alloy has a high hardness value of at least 5.0 GPa.

9. (Original): The dental prosthesis as described in claim 1, wherein the bulk-solidifying amorphous alloy is based on ferrous metals.

10. (Currently Amended): The dental prosthesis as described in claim 9, wherein the bulk-solidifying amorphous alloy has a hardness of about 7.5 GPa and higher.

11. (Canceled).

12. (Original): The dental prosthesis 1 as claimed in claim 1, wherein the bulk-solidifying amorphous alloy further comprises a ductile metallic crystalline phase precipitate.

13. – 16. (Canceled).

17. (Original): The dental prosthesis as described in claim 1, wherein the dental prosthesis is coated with a biocompatible resin cement.

18. (Original): The dental prosthesis as described in claim 17, wherein the cement is reinforced with a metal primer agent and an oxide selected from the group consisting of alumina, magnesia, zirconia, and a combination of these oxides.

19. (Original): The dental prosthesis as described in claim 1, wherein the at least one portion formed from the bulk-solidifying amorphous alloy has a selection thickness of at least 0.5 mm.

20. (Previously Presented): The dental prosthesis as described in claim 1, wherein the dental prosthesis is in the form of a dental device selected from the group consisting of a crown, a bridge or a cap.

21. – 36. (Canceled).

37. (Currently Amended) An object comprising a replication of at least one surface feature of a near-to-net shape object on at least one portion formed of a bulk-solidifying amorphous alloy having an elastic strain limit of about 1.2% or more, a high hardness value of at least about 4 GPa, a glass transition temperature up to 450°C, and a coefficient of thermal expansion of about  $10^{-5}$  (m/m °C.) or less.

38. (Previously Presented) The object of claim 37, wherein the bulk-solidifying amorphous alloy is described by the following molecular formula:  $(Zr)_a(Ni,Cu,Fe)_b(Be,Al,B)_c$ , where "a" is in the range of from about 30 to 75, "b" is in the range of from about 5 to 60, and "c" in the range of from about 0 to 50 in atomic percentages

39. (Previously Presented) The object of claim 37, wherein the bulk-solidifying amorphous alloy is described substantially by the following molecular formula:  $(Zr)_a(Nb,Ti)_b(Ni,Cu)_c(Al)_d$ , where a is in the range of from 45 to 65, b is in the range of from 0 to 10, c is in the range of from 20 to 40, and d in the range of from 7.5 to 15 in atomic percentages.

40. (Previously Presented) A object of claim 37, wherein the bulk-solidifying amorphous alloy has an elastic strain limit of about 1.8% or more.

41. (Previously Presented) The object of claim 37, wherein the bulk-solidifying amorphous alloy has a high fracture toughness of at least about 10 ksi√in.

42. (Previously Presented) The object of claim 37, wherein the bulk-solidifying amorphous alloy has a high hardness value of at least about 5.0 GPa.

43. (Previously Presented) The object of claim 37, wherein the bulk-solidifying amorphous alloy is based on ferrous metals.

44. (Previously Presented) The object of claim 37, wherein the bulk-solidifying amorphous alloy has a hardness of about 7.5 GPa and higher.

45. (Previously Presented) The object 1 of claim 37, wherein the bulk-solidifying amorphous alloy further comprises a ductile metallic crystalline phase precipitate.

46. (Currently Amended) The object of claim 37, wherein the bulk-solidifying amorphous alloy is Al, Ni or Be free.

47. (Currently Amended) The object of claim 37, wherein the bulk-solidifying amorphous alloy is Ni or Al free.

48. (Currently Amended) The object of claim 37, wherein the bulk-solidifying amorphous alloy is comprises Be-free.

49. (Previously Presented) The object of claim 37, wherein the at least one portion formed from the bulk-solidifying amorphous alloy has a section thickness of at least 0.5 mm.

50. (Previously Presented) The object of claim 37, wherein the bulk-solidifying amorphous alloy is described by the following molecular formula:

$(\text{Zr,Ti})_a(\text{Ni,Cu})_b(\text{Be})_c$ , where "a" is in the range of from about 40 to 75, "b" is in the range of from about 5 to 60, and "c" in the range of from about 0 to 50 in atomic percentages.

51. (Currently Amended) The dental prosthesis object of claim 37~~1~~, wherein the bulk-solidifying amorphous alloy ~~is free of Ni, Al and~~ comprises Be.

52. (Previously Presented) The object of claim 37, wherein the bulk-solidifying amorphous alloy lacks any microstructure and the bulk-solidifying amorphous alloy is configured to replicate intricacies of an impression.

53. (Currently Amended) An object comprising a replication of at least one surface feature of a near-to-net shape object on at least one portion formed of a bulk-solidifying amorphous alloy having an elastic strain limit of about 1.2% or more, a high hardness value of at least about 4 GPa, a glass transition temperature of 500°C or above, and a coefficient of thermal expansion of about  $10^{-5}$  (m/m °C.) or less.

54. (Previously Presented) The object of claim 53, wherein the bulk-solidifying amorphous alloy comprises a nickel-base alloy.

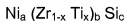
55. (Previously Presented) The object of claim 53, wherein the bulk-solidifying amorphous alloy comprises a ferrous alloy.

56. (Previously Presented) The object of claim 53, wherein the bulk-solidifying amorphous alloy is a ferrous alloy comprising Fe, Ni and Co.

57. (Previously Presented) The object of claim 53, wherein the bulk-solidifying amorphous alloy has the glass transition temperature of 550°C or above.

58. (Previously Presented) The object of claim 53, wherein the bulk-solidifying amorphous alloy lacks any microstructure and the bulk-solidifying amorphous alloy is configured to replicate intricacies of an impression.

59. (Previously Presented) The object of claim 53, wherein the bulk-solidifying amorphous alloy comprises a composition being represented by the following general formula:



where a, b and c are atomic percentages of nickel, zirconium plus titanium and silicon, respectively, and x is an atomic fraction of titanium to zirconium, wherein;

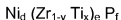
45 atomic %  $\leq a \leq$  63 atomic %,

32 atomic %  $\leq b \leq$  48 atomic %,

1 atomic %  $\leq c \leq$  11 atomic %, and

0.4  $\leq x \leq$  0.6.

60. (Previously Presented) The object of claim 53, wherein the bulk-solidifying amorphous alloy comprises a composition being represented by the following general formula:



where d, e and f are atomic percentages of nickel, zirconium plus titanium and phosphorus, respectively, and y is an atomic fraction of titanium to zirconium, wherein;

50 atomic %  $\leq d \leq$  62 atomic %,

33 atomic %  $\leq e \leq$  46 atomic %,

3 atomic %  $\leq f \leq$  8 atomic %, and

$0.4 \leq y \leq 0.6$ .

61. (Previously Presented) The object of claim 59, wherein the bulk-solidifying amorphous alloy further comprises V, Cr, Mn, Cu, Co, W, Sn, Mo, Y, C, B, P, Al, or combinations thereof.